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ABSTRACT

A sociometric evaluation, conducted in Idylwild Elementary School, Gainesville, Florida, examined acceptance by one's childhood peers in social and academic situations. A 20 percent stratified random sample of the 402 students was designated the experimental group, with the rest serving as controls. Teachers were told that experimental group members showed unusual promise for classroom leadership, and then after 10 weeks all classrooms were evaluated again. Differences in pre- and posttest scores on tests of social acceptance were found, and the differences in gain scores between the experimental and control groups were tested for significance. It was concluded that teacher expectancy, as developed in this study, did not effect changes in the peer acceptance of experimental group members in either social or academic situations. It is suggested that further research be done in this field using more sensitive tests for measuring social position, letting a longer time elapse between pre- and posttests, and using methods to insure teacher credulity of experimentally designated expectations. (A bibliography is appended.) (RT)

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TEACHER EXPECTANCIES: THEIR EFFECT UPON PEER ACCEPTANCE

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CHAPTER I

INTRODUCTION

Whether heterogeneously or homogeneously grouped, in attendance at regular or special classes, for an entire school day or for a single period, the classroom contains a distinct social group. Within this group a child experiences and learns social roles. It is within the classroom that a child develops many of the skills he later must use in dealing with his adult peers. Whether a self-concept, learning theory, psychoanalytic, or Gestalt frame of reference is held, the classroom must be recognized as the arena in which many social skills are learned.

Various methods have been developed in an attempt to describe social relationships as they exist within a group. Sociometric techniques have been developed for eliciting and analyzing responses from members of a defined social group about each other. Graphic and mathematical techniques for use in presenting and analyzing these relationships also have been developed. There exists an extensive body of literature dealing with sociometric relationships in descriptive terms but few attempts have been made experimentally to manipulate these relationships.

That teachers play a large role in the structure and activity of the classroom is easily demonstrated. Descriptive and experimental research exists which treats teacher effect upon such factors as academic gain, creativity, behavior, and, more recently, classroom

interaction. The measurement of classroom interaction has been studied extensively and techniques for teacher control of this interaction have been developed. These studies deal primarily with class-teacher interaction rather than student-student interaction.

During the past several years experimental research in the classroom has attempted, particularly through use of enrichment, Headstart, and the manipulation of various materials and methods in the early grades, to effect change in the intellectual levels of children. That IQ can be raised through these methods often has been demonstrated.

Moreover, recently it has been reported that IQ can be raised simply by having a teacher expect an increase in student IQ. Rosenthal, in his writings, critically discussed in Chapter II, pointed out the effect of experimenter expectancy. Most of the reports of experimental expectancy have dealt with experimenter-single subject situations.

It was the purpose of the present study to investigate the extension of experimental expectancy to social situations, to investigate the effects of expectancy upon second, third, and fourth party interpersonal relationships as opposed to individual performance.

Teacher judgment of students and student behavior is reported as having high validity. This has been demonstrated particularly in such areas as academic success and emotional health. An additional purpose of the present study was to investigate the validity of teacher judgment in the area of peer relations.

The literature which forms the background of this study, including student social position, classroom sociometry, and teacher expectancy, is presented in Chapter II. On the basis of the studies reviewed, the

following questions were posed and statistically examined:

1. Is there a statistically determinable effect, at any grade level, of teacher expectancy upon social acceptance?

2. Is there a statistically determinable effect of teacher expectancy when an entire school population is evaluated?

3. Are teachers aware of changes in the social acceptance of their students?

Answers to these questions may contribute to a body of knowledge upon which teachers can draw in helping to develop qualities that make for increased social acceptance.

CHAPTER II

REVIEW OF THE LITERATURE

Sociometry

Sociometric techniques have been developed for eliciting and analyzing the evaluations, put forth by members of a defined social group, with respect to each other. Sincer Moreno's (1938) first publications in the field of sociometry, advances in technique have been made and used for the study of social interaction in schools, factories, offices and the military. Although students of sociometry, in the past, have been charged with being cultish for their affiliation with Moreno, the sociometric "test" has been recognized widely as a powerful technique. Considerable credit goes to Moreno and his followers for the development and use today of the sociometric test.

Lindzey and Borgatta (1954, p. 405) pointed out that several authors have suggested a general, inclusive meaning for the word sociometry as the general enterprise of social measurement. The bulk of the literature in the field, however, has used sociometry in a narrower sense applying only to those techniques growing out of Moreno's original work.

Although Moreno was the first to use the idea of sociometry in structuring a group according to expressed preferences, such authors as Almack (1922), Warner (1923), Olson (1929), Loomis (1931), and Challman (1932) had employed observational techniques for studying

group structure. Developing out of the presentation of data in a simple matrix, depicting by means of a sociogram as developed by Bronfenbrenner (1944), and emerging into the application of matrix algebra, as by Glanzer and Glaser (1959), more sophisticated methods of treating sociometric data have evolved. Most research involving sociometric techniques, however, has been descriptive or it has aimed to have functional application but only limited experimental application.

Various factors have been studied to determine their effect upon peer acceptance. These include intelligence, chronological age, and mental age. The influence of intelligence has been investigated repeatedly and reported upon in the literature since the advent of intelligence testing in the 1920's. Warner (1923) found that boys were selected as friends more on the basis of chronological age than mental age as compared with Almack's (1923) findings that children tended to select playmates or friends on the basis of mental maturity, apparently without regard for chronological age. Jenkins' (1931) findings suggested a tendency to choose friends of the same approximate intelligence. Challman (1932) found IQ not a significant factor in choice of friends at the nursery school level. Typical problems of sample size and selection as well as primitive techniques gave many of these earlier studies in the field a rather confusing net impact.

Research into social relationships and the feelings within social groups has been conducted with groups of children in special education and in groups in which there are children with marked individual variations. Johnson (1950) and Johnson and Kirk (1950), in their frequently cited study, found retarded children to be less accepted and

more rejected than were the typical children in regular classes. These subjects were found to be ". . . socially segregated even when they are physically integrated in the regular class." Baldwin (1958), in a similar study of subnormal children who were enrolled in regular classes, found the social acceptance of retarded children significantly lower, without relation to sex, age, grade level, or median intelligence of the classes.

Such findings, particularly those dealing with retarded children, constitute one of the major justifications invoked for special class placement. It is contended that in a class situation with other children of similar IQ, the retardate can find acceptance while learning socially acceptable behavior, learning which, it is argued, is made more difficult in regular classes.

More recently Jacobs and Pierce (1968) point out that poor peer relationships and rejection by peers exists even within classes for the mentally retarded. Those behavioral characteristics commonly associated with brain damage were found to be closely and cumulatively associated with rejection among the 155 retardates studied. Rejection is not limited, among children with lowered IQ, to those diagnosed as retarded. In a study of slow learners, Jacobs and others (1967) reported children with IQs of 70 to 90 as being " . . . significantly more often mentioned as being among the three children having the greatest difficulty getting along with their peers."

Handicapping conditions of many sorts have also been studied as they related to peer acceptance. In a study of speech defects, Perrin (1954) found more isolates than would be expected by mere chance when

compared to their normal peers. However, Brissey and Trotter (1955) found no significant relationships between severity of speech defect and social position. Using children currently involved in speech therapy, Freeman and Sonnega (1956) found "no basis for assuming speech defective children to be socially rejected merely because of their speech."

Force (1956), working with physically handicapped children found that,

> physically handicapped children are not as well accepted as normal children in integrated classes. . . The psychological integration of physically handicapped children among normal peers cannot be achieved by mere physical presence in a mixed group (p. 107).

Without being specific, Force points out that different disabilities have varying degrees of social inpact. He further maintains that those children with the highest social acceptance had fewer negative behavior traits. In a similar study, Soldwedel and Terril (1957) found social position unrelated to handicaps. However, in this study all of the subjects were in a special school.

Elser (1961) found that children with hearing handicaps were not as well accepted as were their peers. However, Elser did not distinguish between types of hearing disability or related behavioral characteristics.

In most of the studies of handicapping conditions among children, children with problems were found to be more often rejected and less often accepted than their peers. However, no single handicap could conclusively be shown to be consistently associated with rejection.

Recently several studies dealing with creativity and higher intelligence levels have been reported. Kurtzman (1967) found an interaction of sex and creativity on measures of social acceptance. Highly creative boys were more often chosen by their peers, whereas highly creative girls were less often accepted.

In another study in this area, Jacobs and Cunningham (1969) examined the interaction of grade, sex, intelligence and creativity on peer acceptance in social and academic situations. In academic situations they found that both creativity and intelligence positively influenced peer acceptance. Children chose peers to work with who were both high in creativity and high in intelligence over those who lack either, and especially both, of these qualities. In social situations, however, there was a significant interaction of creativity and intelligence. This interaction was the only area of significant difference among the four variables and their interaction which were considered. Low IQ-high creative or high IQ-low creative children were most preferred; second was the high-high group which was in turn preferred over the low-low group in acceptance in social situations.

Intelligence, creativity, handicapping conditions, and behavior seem to be related to social or peer acceptance. None of the studies has demonstrated an absolute single criterion for predicting aversion or preference. Nor do the several variables affect acceptance equally in all social situations. It is suggested that with social acceptance, as with leadership, a great many variables interact with given situational circumstances rather than only with each other so as to determine high or low levels of social acceptance. It is further suggested

that, again as with leadership, the relationship between many of the variables considered and social acceptance is not linear. For example, leaders seldom have the highest IQ to be found among the members of the group they lead; but leaders generally have an IQ above the mean IQ of the group.

Perhaps with the development of more sophisticated sociometric techniques as well as refined statistical methods for treating the data, clearer information about children's evaluations of social acceptance will emerge in the near future.

Reliability of Sociometric Techniques

Using test-retest techniques for measurement of reliability with sociometric data is of questionable value due to the difficulty in distinguishing between the effects of memory and those of real change. Nonetheless, Jennings (1943), Newstetter, Feldstein, and Newcomb (1938), as well as Zeleny (1939), used retest intervals of four days or less and found correlations between choice-status indices ranging from 0.93 to 0.96. Using a longer retest interval of eight months, Jennings (1943) found a correlation of approximately 0.65. Clark (1969), using a retest interval of approximately two weeks with institutionalized retardates, found higher than 84 percent congruence of choice.

In reviewing the problems associated with reliability of sociometric data, Remmers (1965) stated:

> . . . if the interval is long, there may be real change in group structure which will lower reliability coefficients,

> If . . . fluctuations occur, a low "reliability" coefficient would be more desirable than a high one . . . The test-retest reliability coefficient could actually be a measure of fluidity of group structure - a low reliability coefficient indicating merely a group which tends to shift its choice pattern easily. (p. 348)

Validity of Sociometric Techniques

Jennings (1943, p. 27) pointed out that most psychological tests are designed to measure some trait by eliciting verbal responses from the subject, whereas in a sociometric study, observable behavior is sampled. If sociometric data are studied in themselves rather than being taken as indices of more general traits they should be subjected to validation against a suitable criterion. Gronlund (1959), who reviewed the technical literature dealing with reliability and validity, concluded that internal consistency in sociometric studies has tended generally to be high; that stability over time also tended to run high, varying positively with the age of the individuals studied, and inversely with the time interval considered.

Experimental Expectancy

Following upon earlier studies, the attention of many psychologists and educators has been attracted recently to the phenomenon of experimental expectancy as it affects experimental variables. Perhaps Rosenthal's Pygmalion in the Classroom (1968) is the best known of the studies of this kind. Though recently criticized (Buckley, 1968) the phenomenon of a "self fulfilling prophecy" experimentally has yet to be

refuted or to have accrued sufficient support to be put forward in more than the form of a tentative hypothesis.

Rosenthal (1968) traced the history of experimental expectancy to, and perhaps beyond, the early 1900s with the following illustration:

> Just about the time Alfred Binet was developing his test in France, there was taking place in Germany one of the longest, most thorough, and most famous intellectual evaluations of the century. That evaluation was of the alleged intellectual abilities of Clever Hans, the horse of Mr. von Osten. Hans' considerable talents in the fields of linguistic, mathematical and musical analysis, it will be recalled, were contingent upon his examiners' giving him unwitting and subtle cues, cues which seemed to derive from his examiners' expectations that Hans would accurately tap out with his foot the answers to an amazing variety of questions. (Pfungst, 1911, 1965)

Whereas most of the earlier studies involved shared expectancies of an experimenter and "experimental animals," investigations with human subjects began appearing in the literature late in the 1950s, and the most often cited studies were conducted in the 1960s.

Among the early reports related to experimental expectancy with human subjects, Malmo, Boag, and Smith (1957) reported differentiated heart rates of patients dependent upon whether the clinician was having a "bad day," which produced an accelerated rate, or a "good day" which was associated with a slower rate.

"Situational" effects, e.g., the sex or race of the experimenter as contrasted to the subject, have had a place that has been well documented. That an experimenter's personality can affect his human subject has

also been documented. Berger (1954) reported finding that clinicians' perceptions of Rorschach blots were sometimes significant determinants of their examinees' perceptions of Rorschach blots. Sacks (1952) reported a project in which more warmly treated nursery school children showed a net increase of nearly ten IQ points relative to more indifferently treated children.

Ekren (1962), found a distinction between examiners' administration of the Block Design subtest of the Wechsler Adult Intelligence Scale (WAIS) to high achievers and to low achievers. Although WAIS scores showed, as a result of reported procedural difficulties, no distinction between subjects, the subjects reported contrasting affective behaviors on the part of the examiners directly related to the expectations held by the examiners. An analysis of the subjects' ratings of their examiners' behavior showed that when examiners were contacting subjects alleged to be earning higher grades they behaved in a more friendly, likeable, interested and encouraging manner; they showed a more expressive face, etc. Although no significant differences existed in scores in the Ekren study, Gordon and Durea (1948) reported that substantial differences in IQ scores related to the affect of the examiner on the examinee.

On the basis of available studies, Rosenthal (1968) concluded " . . . it appears that (the WAIS) may not be susceptible to the effects of the examiners' expectancies. . . ."

Still more studies used the Rorschach (Masling, 1965; Marwit and Marcia, 1967; Strauss, 1968), the Taylor Manifest Anxiety Scale (Pflugrath, 1962), word association tests (Silverman, 1968) and several

other instruments. When he probed such experiments, Rosenthal (1968) concluded that chance rather than experimental expectancy could be said to be operating at a probability of one in several million.

The most often cited study, and the one which has the most interest to educators, is Rosenthal's (1966) study described in Psychological Reports. That report provided the basis for Pygmalion in the Classroom. Rosenthal worked with students and teachers in 18 classrooms in the San Francisco area. Teachers were told that 20 percent of the children in their classes showed unusual potential for intellectual gains. Although the teachers were told that the children were identified on the basis of a "test for intellectual blooming" the students in fact constituted a random sample of the classes. At the end of the experimental period, the "unusual" children showed significantly greater gains in IQ, as measured by Flanagan's (1960) Nonverbal Test of General Ability, than did the remaining children in the control group. To Rosenthal, the effects of teacher expectancy were especially apparent among the younger children.

CHAPTER III

DESIGN OF THE STUDY

Locale and Population

Once the cooperation and support of the principal and teachers of Idylwild Elementary School, Gainesville, Florida had been obtained, all children enrolled in that school, with the exception of those in the two half-day kindergartens, were treated as subjects in the present study. There were three first grade classes, one special education class, and two sections of the second, third, fourth, fifth, and sixth grades. A characterization of the population by grade, sex, and year in school appears in Table 1.

Table 1.--Students at Idylwild School During Experimental Period Covered in This Study

Grade	Number of Sections	Number of Boys	Number of Girls	Number of Negroid	Number of Caucasoid
1	3	4	43	17	70
2	2	35	28	16	47
3	2	29	26	12	43
4	2	34	33	17	50
5	2	34	28	18	44
6	2	32	24	9	47
Special Education	1	3	9	5	7
Total	14	211	191	94	308

Procedures

Two sociometric measures of acceptance were administered in each of the 14 classrooms in Idylwild School. The first measure, of acceptance in academic situations, was designed to elicit two choices in response to the question "With which student would you choose to work on a class assignment?" A second measure, dealing with peer acceptance in a social situation was administered after an interval of at least two, but no more than 20, hours. The second stimulus question was "With which student would you choose to attend a movie on Saturday?"

Every attempt was made to insure that the student understood the questions. Sufficient time was taken to give as much elaboration and explanation of the questions to individuals as was necessary. Each student was interviewed individually apart from his classmates in an effort to insure the secrecy of his response. Assurance was given to each student concerning the confidentiality of his response. It was explained that the investigator would not tell his choices to anyone.

Name, sex, date of birth, and race of each child was ascertained, along with his response to each stimulus item. After the initial responses were gathered and the data punched into IBM cards, the population was stratified by grade, sex, and race. A 20 percent random sample of each substratum was selected through reference to a table of random numbers. This random sample was designated as the experimental population with the remainder of the school population serving as controls.

Letters were sent to each teacher expressing appreciation for her help in the project and suggesting to her that a portion of the students

in her classes (those who were experimental subjects, in fact) showed "unusual promise and should, during the next few months, emerge as 'stars' . . . or leaders in the classroom." This letter is included in the Appendix.

It was asserted that these projections were made on the basis of the sociometric study conducted earlier in the school, coupled with special outside information available to the investigator.

Deception of the teachers was not involved since if experimental expectancy would operate as anticipated, those students named would, indeed, develop socially and as leaders to a greater extent than would the control group.

After approximately 10 weeks a sociometric reexamination of the children in all classes at the school was made. The procedure followed during the second administration of the instrument exactly paralleled those already outlined. Treatment of these data is discussed in a separate section.

Immediately following the readministration of the sociometric instrument, the teachers were asked to supply information relative to their perceptions of change in the sociometric positions of the children in their classes. On a form that listed the names of each child in the class, the teachers were asked to indicate with a (+) those children who they felt "had developed most in social skills, the ability to make and hold friends," and to mark with a (-) those children who had regressed in this area, and to leave blank those items on children in whom there had been no change.

Since the youngest children in the study required fuller elaboration whereas with the older children only the specific question was asked after an initial explanation of the procedures involved, it was deemed appropriate to establish the consistency of responses in related social situations. In order to demonstrate this consistency with younger children as well as the independence across relatively distant social situations, one second grade class was later asked three specific questions without elaboration. The questions were: 1. Which three classmates would you most want to have help you with your schoolwork? 2. Who are the three classmates you would most want to work with on a science project? and 3. Which three classmates would you most want on your team during play period? Since questions one and two dealt with relatively similar social situations (of the type used in elaboration in the earlier experimental portion of this study) and question three dealt with a relatively distant, subjectively, social situation, it was hypothesized there would be a relatively high correlation between the responses to questions one and two whereas the response to each would have a relatively low correlation with the responses to question three.

Treatment of the Data

In the analysis of the findings, only those children who were enrolled during the entire experimental portion of the study were considered. Those children who had been removed from the school or who had been enrolled during the experimental portion were omitted from calculations and the data analysis.

The total population in the study consisted of 87 first grade students, 63 second grade, 55 third grade, 67 fourth grade, 62 fifth grade, 56 sixth grade and 12 special education students. A summary of these figures is presented in Table 1.

Separate Z scores were calculated for each child involved in the study for both social and academic acceptance on both pre- and post-sociometric ratings. The calculation of Z scores was based on the technique developed by Bronfenbrenner (1945, p. 30) and can be expressed by the equation $Z = \frac{\underline{x} - M}{\sigma}$ where M = n (the number of students in the class) times p (where p = the number of choices alloted per student divided by n - 1), $\underline{x}$ is the limit of the interval wherein the raw score value of the number of times chosen lies, and $\sigma = \sqrt{n \times p \times (1-p)}$. The probability of chance occurrence corresponding to Z could, at this point, be determined by referring to tables developed by Salvosa (1930) for dealing with Pearson Type III functions.

Change scores were then calculated by subtracting pre-experimental Z scores from post-experimental Z scores for both academic and social acceptance scores. Comparisons between experimental and control populations were then performed on the change scores using the method described by Tatsuoka and Tiedeman (1963).

Since Rosenthal (1966) suggested differential effects of experimental expectancy according to grade levels, comparisons were made for each grade level as well as an overall comparison for the entire school.

Teacher ratings of growth in social and academic acceptance were compared with several variables as shown in the following: 1. A

comparison of teacher ratings of growth with growth as measured on the sociometric instruments in social situations, 2. a comparison of teacher rating of growth with actual growth in acceptance in academic situations, and 3. a comparison of teacher rating of growth with the prediction of growth as presented in the letter each teacher received designating certain of her students as showing potential for growth in social acceptance.

Social and academic acceptance change scores were dichotomized into growth or nongrowth and teacher judgment was also dichotomized into either perceived growth or perceived nongrowth. A simple chi square and phi coefficient had to be calculated with each of these crossbreaks since small numbers in some cells did not allow the use of complex chi square or contingency coefficients.

The data dealing with consistency of response were treated by rank ordering students according to the number of times chosen on each question and calculating the three Spearman Rank-Order Correlations according to the method described by Bruning and Kintz (1968, p. 156).

CHAPTER IV

RESULTS

Social Position

A comparison of mean gain scores in social acceptance for the experimental and control groups is depicted in Tables 2 and 3. Gain in social acceptance is defined in the present study as the difference between translated pre-and post-administration sociometric scores for each child.

In the three sections of the first grade, there were a total of 87 students. Of these, 44 were male and 43 were female. There were 70 Caucasoid and 17 Negroid children. Twenty one of these children, or 24 percent, were designated experimental and were predicted to show growth in social development both in social situations and in academic situations.

Mean gain in acceptance in social situations for the experimental group was -0.034 (s.d. = 1.395) and mean gain for the control group was 0.120 (s.d. = 1.488). The t score calculated on this difference was -0.415 and, with 85 degrees of freedom, it is not a significant change.

As for acceptance in academic situations, the experimental group mean gain score was -0.068 (s.d. = 2.010), whereas the mean gain score for the control group was 0.022 (s.d. = 1.522). Again, the control group showed an increase in acceptance scores, whereas

Table 2.--Gain in Acceptance in Social Situations

Grade	N Exp/Cont	Experimental Mean Gain	S.D.	Control Mean Gain	S.D.	D.F.	t
1	21/66	-0.034	(1.395)	0.120	(1.488)	85	-0.415
2	13/50	-0.443	(1.299)	0.173	(1.122)	61	-1.122
3	11/44	1.116	(2.149)	-0.242	(1.514)	53	2.383*
4	14/53	-0.258	(1.426)	0.025	(1.191)	65	-0.745
5	13/69	0.276	(1.702)	0.003	(1.228)	60	0.642
6	11/45	0.001	(1.822)	0.018	(0.915)	54	-0.043
Special Education	3/ 9	0.236	(0.428)	-0.094	(1.766)	10	0.292
Total	86/316	0.076	(1.602)	0.023	(1.281)	400	0.318

*$p < .05$

the experimental group showed a decrease. The difference was not significant, however in this case the t score was -0.217.

There were 63 children in the two sections of the second grade. Included were 35 males and 28 females. There were 47 Caucasoid and 16 Negroid children in this grade. Thirteen children were designated at random as being in the experimental portion of the study. This number amounted to 20.6 percent of the children in the second grade.

Mean gain in acceptance for the experimental group in social situations was -0.433 (s.d. = 1.299), and mean gain for the control group amounted to 0.173 (s.d. = 1.122). The difference was in a direction contrary to what had been hypothesized but it was not significant: t = -1.122.

Table 3.--Gain in Acceptance in Academic Situations

Grade	N Exp/Cont	Experimental Mean Gain	S.D.	Control Mean Gain	S.D.	D.F.	t
1	21/66	-0.068	(2.010)	0.022	(1.522)	85	-0.217
2	13/50	0.221	(0.682)	-0.043	(1.328)	61	0.683
3	11/44	-0.721	(1.208)	0.182	(1.384)	53	-1.946
4	14/53	-0.104	(0.622)	0.054	(0.844)	65	-0.643
5	13/49	0.179	(0.970)	0.003	(1.335)	60	0.438
6	11/45	-0.026	(1.191)	-0.010	(1.097)	54	-0.042
Special Education	3/ 9	-0.011	(0.009)	-0.094	(1.016)	10	0.129
Total	86/316	-0.069	(1.275)	0.028	(1.266)	400	-0.631

In respect to acceptance in academic situations, the difference while in the hypothesized direction was, again, not significantly different from chance. The mean gain for the experimental population was 0.221 (s.d. = 0.682), and the mean gain for the control group was -0.043 (s.d. = 1.328).

In the third grade, there was a total of 55 children considered in the study. There were 29 boys and 26 girls; 43 of whom were Caucasoid, and 12 were Negroid. Mean gain in acceptance in social situations for the eleven children put into the experimental group was 1.116 (s.d. = 2.149), and mean gain for the 44 children in the control group was -0.242 (s.d. = 1.514). The difference in mean gain in acceptance in social situations for children in the third grade was not only in the hypothesized direction but also was the only situation where the difference achieved was rather significant (t = 2.383, which has a $p < .05$).

The gain in acceptance in academic situations was quite the opposite. The control group there showed an increase of 0.182 (s.d. = 1.384), whereas the experimental group showed a gain of -0.271 (s.d. = 1.208). This difference approaching having significance: $\underline{t}$ = -1.945, with 54 degrees of freedom.

In the two sections of the fourth grade, there were 34 male and 33 females, with 17 being Negroid and 50 Caucasoid. Fourteen children, or approximately 21 percent, were designated as being in the experimental group.

Gain in acceptance in social situations was negative for the experimental group: -0.258 (s.d. = 1.426). The control group showed a gain of 0.024 (s.d. - 1.191). This difference was not significant: $\underline{t}$ = -0.745.

A similar difference existed in the gain scores concerning acceptance in academic situations: Experimental group showed a decline in mean acceptance with a gain score of -0.104 (s.d. = 0.622), whereas the control group increased by 0.054 (s.d. = 0.844). Again this difference was not significant: $\underline{t}$ = -0.643.

There were also two sections of the fifth grade, with a total of 62 students enrolled during the experimental period. There were 34 males and 28 females, 18 of whom were Negroid and 44 Caucasoid. Thirteen students were designated as being in the experimental group (21 percent).

The experimental group had a mean gain of 0.276 (s.d. = 1.702) in acceptance in social situations, compared to a mean gain of 0.003 (s.d. = 1.228) for the control group. This difference was not significant: $\underline{t}$ = 0.642.

Acceptance in academic situations was not significantly different for the experimental and control groups. The experimental group showed a gain of 0.179 (s.d. = 0.970), and the control group had a gain of 0.003 (s.d. = 1.335); yielding a t of 0.438.

There was a total of 56 children in the two sections of sixth grade studied: 32 males and 24 females, with 9 blacks and 47 whites.

There were no significant differences on acceptance in either social situations or academic situations. The experimental group had a mean gain of 0.001 (s.d. = 1.822), and the control group a mean gain of 0.018 in acceptance in social situations: t = -0.043.

In academic situations, the experimental group had a mean gain of -0.026 (s.d. = 1.191), and the control group a mean gain of -0.010 (s.d. = 1.097). In this case, the t value was -0.042.

In the single special education class considered in the present study, there were three boys and nine girls, with five black and seven white children. Three children (25 percent) were designated as being in the experimental group.

In acceptance in academic situations, the experimental group had a mean gain of 0.236 (s.d. = 0.428) and the control group showed a mean gain of -0.094 (s.d. = 1.766). Even though this change was in the hypothesized direction, it cannot be considered significant: t = 0.292.

Mean gain in their acceptance when in social situations for the experimental group was -0.011 (s.d. = 0.009), and for the control group, -0.094 (s.d. = 1.016). Again, the t value for this difference does not approach significance, being only 0.129.

Of the 14 t tests, considering acceptance in both academic and social situations, only one test resulted in showing significance at the .05 level. Considered in this light, even the single significant t probably should not be considered meaningful since chance alone would account for one t significant at the .05 level if twenty random samples were tested.

This cautious interpretation of the data seems to be warranted when the entire school population is considered. For the school 86 children of the 402 studied (or slightly more than 21 percent) were designated as being in the experimental group. In the area of acceptance in social situations, the experimental group showed a mean gain in social acceptance of 0.076 (s.d. = 1.602), and the control group showed a mean gain of 0.023 (s.d. = 1.281). Though the experimental group did show a slightly greater gain (0.05 standard deviation) than did the control group, the difference was far from being significant: t = 0.318.

For acceptance in academic situations, the difference was less than .01 standard deviations, with the experimental group showing an absolute loss of acceptance (mean gain = -0.069, s.d. = 1.275), and the control group showing a slight gain (mean gain = 0.028, s.d. = 1.266). Again, the difference was far from significant: t = -0.631.

Experimental Effects of Race

In light of the foregoing findings, the recency of racial integration of classes at Idylwild Elementary School, and the pervasive

whiteness of classroom teachers there, it was asked if differences might exist between the experimental and control groups on the basis of race. Thereupon, an attempt was made to investigate this possibility on the basis of the data collected.

Two separate crossbreaks were analyzed: One concerned only with white students, and one concerned only with black students. Only acceptance in social situations was analyzed with respect to racial categorization. For purposes of this analysis, students were dichotomized: Those showing an increase in social acceptance by the method previously described, and those showing a decrease. Children who did not show a change in acceptance were omitted from this analysis. A summary of the data is presented in Figures 1 and 2.

Change	Condition	
	Experimental	Control
Increase	18	28
Decrease	10	26

Chi square = -0.064

Figure 1.--Chi Square Crossbreak for Black Students Illustrating Number of Students Showing Increase or Decrease in Social Acceptance Under Experimental and Control Conditions

Change	Condition	
	Experimental	Control
Increase	19	111
Decrease	34	109

Chi square = -0.102

Figure 2.--Chi Square Crossbreak for White Students Illustrating Number of Students Showing Increase or Decrease in Social Acceptance Under Experimental and Control Conditions

Similarly with the white population, chi square was -0.102, which is not significant.

Considering only those students who manifested change, i.e., either an increase or a decrease in social acceptance, 26 percent of the blacks in the experimental group (N = 28) decreased and 64 percent of the whites in the experimental group (N = 53) decreased, whereas 48 percent of the Negro control group (N = 54) and 49 percent of the Caucasian control group (N = 220) declined. Since only small differences were found when the data were analyzed in this fashion, it can probably be inferred that race of student did not affect notably the results of this experiment.

Social Gain and Teacher Perceptions

Also investigated was the question of whether teachers are reliable judges of changes in the social positions of their students.

As described in Chapter III, the procedure employed entailed asking the teachers, when the experimental portion of this study was concluded, to indicate which children had developed most in social skills, defining these as ability to make and hold friends, and which students had regressed in this area.

The data were originally tabulated into a three by three matrix showing gain in social acceptance, no change in social acceptance, and loss in social acceptance on one dimension and teacher perceived increase in social acceptance, teacher perceived regression in social acceptance, and no perceived change on the other dimension.

Since several of the cells were extremely small, five entries or less, the matrix was reduced to a two by two. The resultant matrix is shown in Figure 3. This matrix dichotomizes gain scores into actual gain as opposed to no gain or actual loss. Teacher judgment is dichotomized into perceived growth and perceived loss or no change.

The resultant chi square was 7.25, which is significant at the .01 level. As a measure of the extent of relationship of teacher judgment of change in social acceptance, phi was calculated. Phi in this instance was .13 which is small but, as demonstrated above, significant.

Teacher Judgment	Actual Change	
	Gain	Loss or No Change
Gain	46	57
Loss or No Change	90	209

Chi square = 7.25; Phi = .13

Figure 3.--Chi Square Crossbreak Illustrating Teacher Perceived Change in Social Acceptance as Related to Actual Change in Social Acceptance

Relationship of Prediction to Teacher Judgment

An attempt was made to determine whether the experimental procedure, the prediction of increased social acceptance of a random sample of students, was related to the perceptions by teachers of students' social growth. As with the above analysis of actual gain in social acceptance and teachers' perceptions of gain, the data were dichotomized into a two by two crossbreak: Teacher perception of growth on one dimension and predicted growth on the other dimension. The resultant matrix is illustrated in Figure 4.

In this analysis Chi square equals .68 which is not significantly different from chance. This suggests that teacher judgment of change in social acceptance on the part of her students was independent of the predictions made for experimental purposes.

Predicted	Teacher Judgment	
	Gain	Loss or No Change
Gain	25	61
Loss or No Change	78	638

Chi square = 0.68

Figure 4.--Chi Square Crossbreak Illustrating Teacher Perception of Change in Social Acceptance as Related to a Prediction of Change on the Part of the Experimental Group

Consistency of Social Position

As described in Chapter III, 28 pupils in the second grade were interviewed in an attempt to determine a) the consistency of children's responses in related social situations, and b) the relative independence of social position scores across relatively distant social situations. Following the interview procedure outlined in Chapter III, three specific questions were asked without elaboration. The questions were: 1. Which three classmates would you most want to have help you with your schoolwork? 2. Who are the three classmates you would most want to work with on a science project? and 3. Which three classmates would you most want on your team during play period? It was hypothesized that questions one and two, dealing with relatively similar social situations, would have relatively high correlations and that both question one and two would have lower correlations with question three.

Treatment of the data consisted of rank ordering students by number of times chosen on each question and calculating the three

Spearman Rank-Order correlations according to the method described by Bruning and Kintz (1968, p. 156).

As hypothesized, the rank-order correlation between questions one and two was .861, whereas the rank-order correlation between questions one and three was .211 and between questions two and three it was .220.

This would suggest that while the children most often chosen on question one were almost often chosen on question two, these were not the same children most often chosen on question three. For the children, choosing a play partner entailed different considerations from those used in choosing a work partner.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

A sociometric evaluation was conducted in the 14 regular classrooms of Idylwild Elementary School, Gainesville, Florida. Acceptance by one's childhood peers in both social and academic situations was examined. A 21 percent stratified, random sample of the 402 students enrolled was designated the experimental group; with the remainder of the population serving as controls.

Teachers were told that the members of the experimental group showed unusual promise and would emerge as 'stars' or as leaders in the classroom during the ensuing few months. After ten weeks all classrooms were evaluated again. Social acceptance scores were computed for both experimental and control groups; and differences in pre- and post-evaluations were found. Differences in gain scores between the experimental and control groups were then tested for significance; and it was concluded that teacher expectancy, as developed in the experimental portion of this study, did not effect changes in the acceptance of the experimental group in either social or academic situations. Only one of 16 *t* tests evaluated was significant at the .05 level.

The failure to significantly increase the acceptance level of the experimental population may be attributable to any of a number of causes. The three most likely seem to be:

1. Teacher expectancy was not sufficiently high to result in

noticeable changes in the children. On the basis of subjective feedback from supervisory personnel at the school it was felt that the teachers fully accepted the legitimacy of the predictions; that these were sincere predictions based upon some legitimate hypotheses. Although the teachers did not seem to feel in any way that they were intentionally being misled, whether they accepted or believed specific predictions is open to question. A parallel aspect of this consideration would seem to be the length of time the teachers had been dealing with the children, and the extent to which the teachers were familiar with the children's behavior. In a replication of the present study it is suggested that the expectations be introduced early in the teachers' association with their students.

2. The sociometric technique employed in the present study may not have been sufficiently sensitive to detect an increase in acceptance in the experimental group.

3. Although the design and methodology used in this study was similar to that used by Rosenthal, it must be remembered that the independent variable was social interaction and not performance. It is possible that experimental or teacher expectancy is effective in changing behavior in individuals in relation to the latter's performance on given tasks but that the phenomenon of self-fulfilling prophecy does not extend to third or fourth order interactions.

Since all regular classroom teachers were white while the student population was approximately 20 percent black, the possibility that differential effects, relative to race, would have been detectable. Upon examination of the data in this light, there were still no significant differences.

The validity of teacher judgment of changed peer acceptance on the part of their students was evaluated. There was a significant positive correlation between change as perceived by the teachers and actual change as measured on the sociometric instruments. Since teachers were able to recognize the small changes occuring over the short ten week period, it can probably be assumed that teachers are relatively aware of the social position of children in their classes.

It is recommended that further experiments be undertaken to assess the effect of teacher expectations on social relationships of students. It is further recommended that the following considerations be incorporated into future research in this area:

1. Greater effort be extended toward insuring the teacher credulity or acceptance of experimentally designated expectations and that methods be developed for measuring the strength of these expectations immediately preceding the experimental portion of the study. Instrumentation similar to the sociometric questionnaire could be developed for this purpose.

2. A longer period of time be allowed to elapse between the pre- and post-sociometric evaluations.

3. A more sensitive sociometric instrument be used for the measurement of change in social position. Two possibilities are suggested:

   a. Using unlimited choices for responses on the part of the students measured rather than the limit of two choices as used in the present study. Statistical procedures exist, similar to those employed in the present study, for treatment of instruments that grant unlimited choice.

b. Measuring the social position of each child in the class relative to every other child. This could be accomplished by having an individual child develop his own five point rating scale on the basis of assigning a rating of five to the person he likes best in the world and one to the person he dislikes most, with two, three, and four being intermediate choices. Once the rating scale is developed for each child, he could assign a rank of one to five to each of his classmates before and after the experimental interval. A comparison of each child's pre- and post-evaluation mean rating would provide a more sensitive measure of change in social acceptance.

Discussion

Workable techniques for developing peer acceptance among school children could provide insight into the means required for much broader accomplishments in the field of human relations. At the time of this writing society is faced with a multiplicity of problems in human relations, in understanding, and in acceptance. Paramount examples of relevant and larger situations causing concern are the Viet Nam war and the violence in the cities.

Prescriptions for improving human relations have been offered throughout recorded history. Experimental development of techniques for dealing with human relationships has been begun only recently. Without logically and experimentally developed insights, upon which to design strategies for social change, it would seem that the survival of mankind depends solely upon an unfathomable chance.

APPENDIX

University of Florida Letterhead

Mrs. John Doe
Idylwild Elementary School
4601 Southwest 20th Terrace
Gainesville, Florida

Dear Mrs. Doe:

The Florida Educational Research and Development Council has financed a portion of an ongoing research project dealing with the prediction and development of social skills and leadership in elementary school children. The children at your school are among those being studied.

Using the sociometric data recently gathered in your classroom and other information available to us, the initial projections developed through use of the University of Florida's IBM 360-50 computer indicate the following children from your class show unusual promise and should, during the next few months, emerge as 'stars' (that is, become the focus of peer group acceptance and choice) or as leaders intthe classroom:

_____

_____

_____

_____

_____

Since we have no other means of repaying the time and effort you contributed to the project, we felt sharing this information might compensate in some way by helping you in your planning and work. We will forward further information regarding our project as it develops.

Sincerely,

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